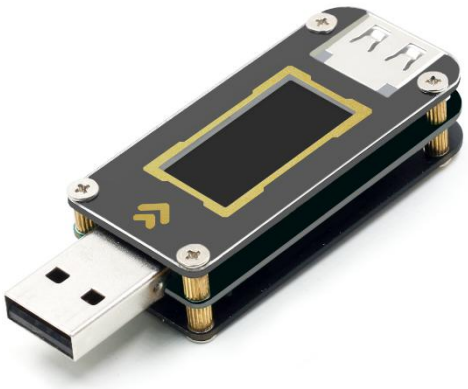
FNB28 user manual

(V1.0)



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一、Overview

FNB28 USB tester is a high-reliability, high-safety USB voltage and current detection meter and mobile communication terminal fast charge trigger. With 0.96 inch TFT LCD display. Can be used to measure the power supply or power consumption of products such as USB interfaces, mobile phone chargers, U disks, etc .; can be used to measure mobile phone charging power, mobile power input and output conditions; can be used to test the fast charging protocol of chargers.

This instruction manual includes relevant safety information, warning tips and solutions to common abnormal conditions, please read the relevant content carefully and strictly observe all warnings and precautions.

二、Pay attention to safety matters

1、Do not connect a power supply exceeding 24V to the tester.

2、FNB28 supports high power input (such as 20V * 5A = 100W).

3、When using high voltage and high power work, the temperature of the tester will rise. Please be careful to prevent burns.

三、Appearance and structure diagram (see Figure 1)

1、USB-A 2.0 male connector

2、K1 button

3、K2 button

4、USB-A 2.0 female connector

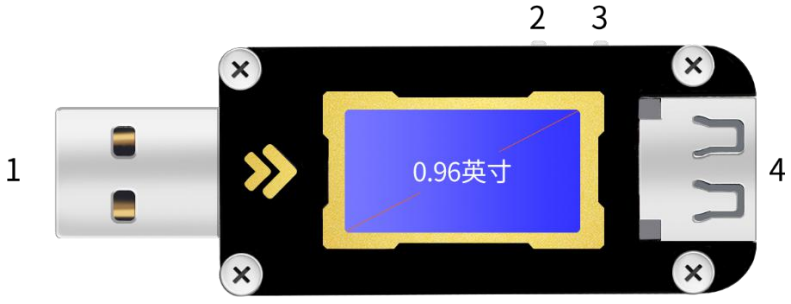


图 1

四、Technical index

Accuracy: ± (a% of reading + number of words)

Index	Range	Resolution	Accuracy
Input voltage	4～24V	1mV	±(0.4%+3)
Input Current	0～5A	1mA	±(0.8%+3)
Input power	0～120W	0.1mW	±(1.0%+2)
Load Equivalent Internal Resistance	0～9999.9Ω	0.1mΩ	±(1.0%+2)
D + / D- voltage	0～3.3V	0.01V	±(1.0%+2)
Equipment temperature	℃	1℃	±(1.2%+3)
	℉	1℉	±(1.2%+4)
Capacity	0～99999.9mAh	0.1mAh	For reference
Energy used	0～9999.999Wh	0.001Wh	For reference
Record time	999 hours 59 minutes 59 seconds	1 second	10 seconds / hour
Equipment runtime	999 hours 59 minutes 59 seconds	1 second	10 seconds / hour

五、Function page operation instructions

1、 Close-up page (see Figure 2)

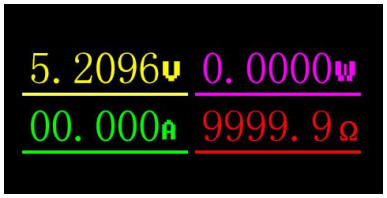


Figure 2

Description

Only the four key parameters of voltage, current, power, and load equivalent impedance are displayed. This page can change the display direction.

Instructions

(1) K1 key

Short press: Turn the page.

(2) K2 key

Short press: Turn the page.

Long press: switch screen display direction.

2、 Capacity / power consumption observation page (see Figure 3)

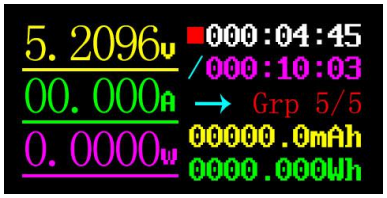


Figure 3

Description

FNB28 supports 4 sets of capacity / power consumption records.

XXX: XX: XX (white) indicates the capacity and power consumption recording time, corresponding to 4 groups of capacity and power consumption, each has a recording time, and it will not be lost when the power is off.

XXX: XX: XX (magenta) indicates the running time after power on, and reset after power on.

→ Represents the direction of current.

Instructions

(1) K1 key

Short press: When set to manual recording, recording can be paused / started, and it is invalid when set to automatic recording;

Long press: Clear the current group record data, including capacity, power consumption, and record valid time;

(2) K2 key

Short press: page turning;

Long press: Switch to the histogram page (see Figure 4)

3、 Histogram page (see Figure 4)

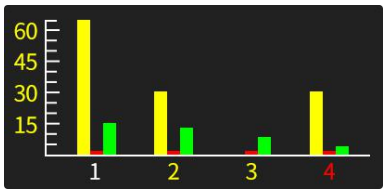


Figure 4

Description

The capacity and power are expressed in two colors. The unit is shown below. The measurement length is 65 units. The calculation formula is as follows:

Capacity: Red: x, unit: 2000mAh

Yellow: y, unit: 2000/65 = 30.76mAh

Capacity = 2000 * x + 30.76 * y (mAh)

Power: Blue: x, unit: 200Wh

Green: y, unit: 200/65 = 3.07Wh

Power = 200 * x + 3.07 * y (Wh)

Instructions

(1) K1 key

Short press: Clear window pops up; (cancel / confirm by clearing the current group by long pressing K1 / K2)

Long press: return to the capacity / battery observation page (see Figure 3);

(2) K2 key

Short press: switch record group;

Long press: Switch to the capacity / power consumption table (see Figure 5).

4、 Capacity / power consumption table page (Figure 5)

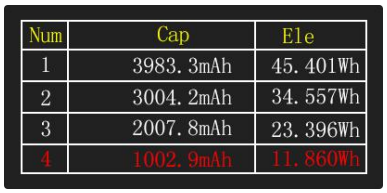


Figure 5

Description

The data of each group can be compared directly based on the value.

Instructions

(1) K1 key

Short press: Clear window pops up; (cancel / confirm by clearing the current group by long pressing K1 / K2)

Long press: return to the capacity / battery observation page (see Figure 3);

(2) K2 key

Short press: switch record group;

Long press: switch to histogram (see Figure 4).

5、 Fast charge identification page (see Figure 6)

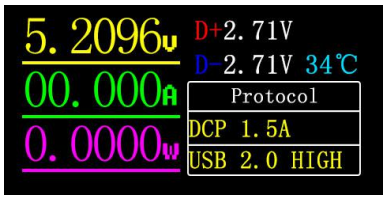


Figure 6

Description

This page is used to observe the current charging protocol, D + / D- voltage.

The list indicates the protocols that the current charging may be triggered, for reference only.

Instructions

(1) K1/K2 key

Short press: page turning.

6、 Fast charge detection and trigger page (see Figure 7)

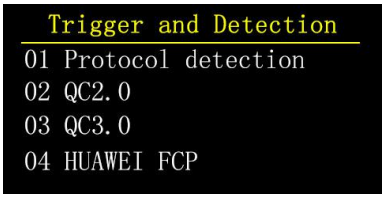


Figure 7

Description

Fast charge detection, fast charge trigger, long press K2 key to enter selection.

6.1 Fast charge protocol detection

After selecting the Protocol detection protocol detection, press and hold the K2 key for a long time to pop up DANGEROUS !!! (see Figure 8). At this time, if you press and hold the K2 button for a long time to enter the auto-detection fast charge protocol state; press and hold the K1 button to cancel the detection。

After the test is completed (as shown in Figure 9), press and hold the K1 key to exit the test interface; press and hold the K2 key to repeat the test steps and retest.

Figure 8

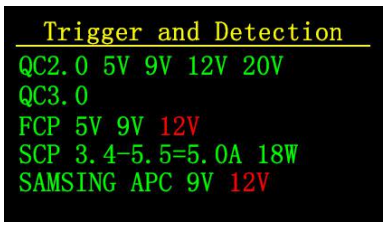


Figure 9

Note: Do not connect any electrical appliances during the detection process, otherwise the high voltage triggered during the detection may burn the electrical appliances!

6.2 QC2.0 trigger

Select QC2.0, press and hold the K2 key to enter the QC2.0 trigger page (as shown in Figure 10), Fail Failure will display Trigger Failure!

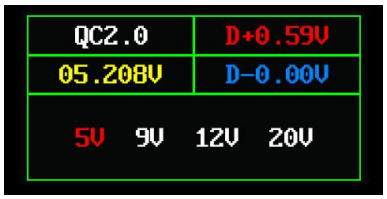


Figure 10

Instructions

(1) K1 key

Short press: switch QC2.0 trigger voltage；

Long press: Exit the current page;

(2) K2 key

Short press: switch QC2.0 trigger voltage

6.3 QC3.0 trigger

Select QC3.0, press and hold the K2 key to enter the QC2.0 trigger page (as shown in Figure 11). Trigger Failure will display Trigger Failure!

Figure 11

Instructions

(1) K1 key

Short press: Decrease the trigger voltage of QC3.0; (step 200mV)

Long press: Exit the current page;

(2) OK key

Short press: raise QC3.0 trigger voltage. (Step 200mV)

6.4 Huawei FCP trigger

Select Huawei FCP, press and hold the K2 key to enter the Huawei FCP trigger page (as shown in Figure 12). Trigger Failure will display Trigger Failure!

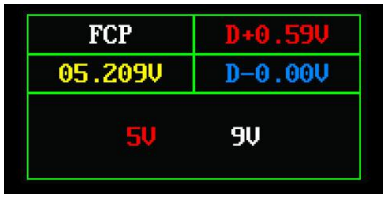


Figure 12

Instructions

(1) K1 key

Short press: switch FCP trigger voltage;

Long press:Exit the current page;

(2) K2 key

Short press: switch FCP trigger voltage.

6.5 Huawei SCP trigger

Select Huawei SCP, press and hold the K2 key to enter the Huawei SCP trigger page (as shown in Figure 13). Trigger Failure will display Trigger Failure!

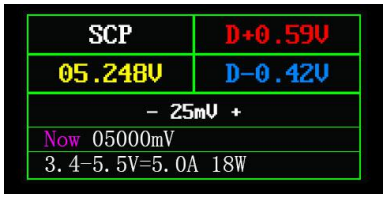


Figure 13

Instructions

(1) K1 key

Short press: reduce SCP trigger voltage;

Long press: Exit the current page; (Exit SCP trigger status at the same time)

(2) K2 key

Short press: Increase SCP trigger voltage.

6.6 Samsung AFC trigger

Select Samsung AFC, press and hold the K2 key to enter the Samsung AFC trigger page (as shown in Figure 14). Trigger Failure will display Trigger Failure!

Figure 14

Instructions

(1) K1 key

Short press: Switch the AFC trigger voltage; (When the charger does not support the trigger voltage, the voltage will return to 5V)

Long press: Exit the current page;

(2) K2 key

Short press: switch AFC trigger voltage. (When the charger does not support the trigger voltage, the voltage will return to 5V)

7、 System information and settings page (Figure 15)

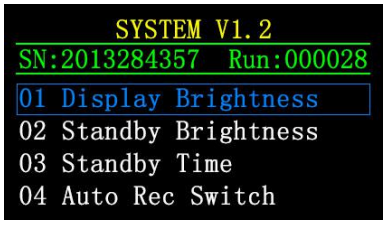


Figure 15

Description

SN: XXXXXXXXXX represents the unique serial number of the product.

Run: XXXXXX indicates the number of times the device has been run.

VX.X indicates the current firmware version.

Instructions

(1) K1 key

(2) Short press: switch setting items;

(3) Long press: Exit the setting window;

(4) K2 key

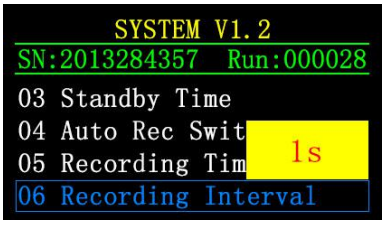
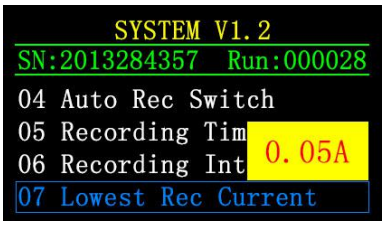
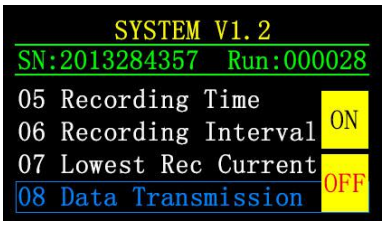
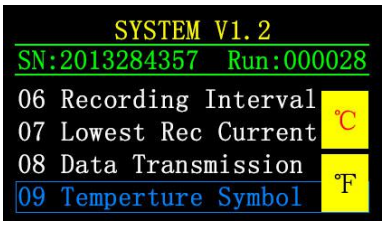
Short press: switch setting items;

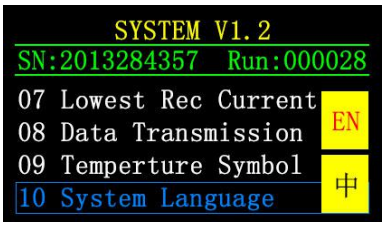
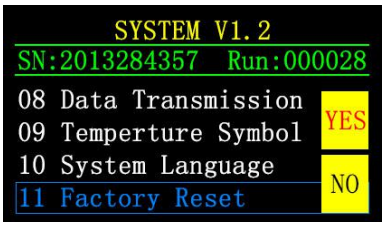
Long press: popup setting window

Setting item description

	Screen display brightness setting, range 1-20 level.
	K1 / K2 key: short press: adjust parameter. Long press: cancel / confirm configuration.
	Standby screen display brightness setting, ranging from 0-20 levels, the backlight is turned off when standby is 0.
	K1 / K2 key: short press: adjust parameter. Long press: cancel / confirm configuration.

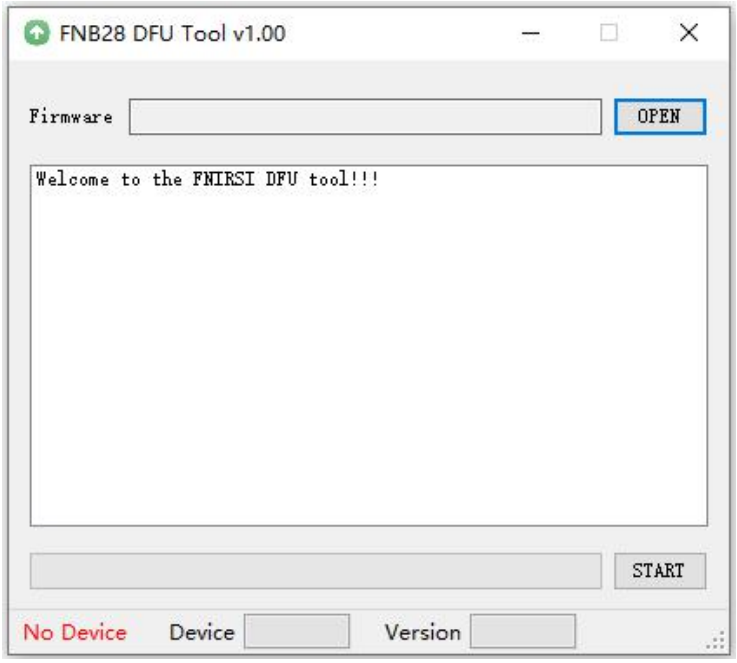
	Enter standby time, ranging from 0-30 minutes. No standby when OFF.
	K1 / K2 key: short press: adjust parameter. Long press: cancel / confirm configuration.
	Automatic recording switch: ON: recording when the current exceeds the threshold;OFF：电流阈值无效，由按键启停记录。
	K1 / K2 key: short press: select. Long press: Cancel / confirm configuration.
	Recording time: limited capacity, power consumption recording time, adjustable range: 0 ~ 8 hours. When Unlimited, the capacity is recorded until the maximum.
	K1 / K2 key: short press: adjust parameter.

	Long press: cancel / confirm configuration.
	Record keeping interval。 K1 / K2 key: short press: adjust parameter. Long press: cancel / confirm configuration.
	Current threshold: effective when the automatic recording switch is ON, current ≥ this value, recording capacity, power consumption. K1 / K2 key: short press: adjust parameter. Long press: cancel / confirm configuration.
	Data transmission: ON / OFF K1 / K2 key: short press: select. Long press: cancel / confirm configuration.
	Display temperature symbol: ° F / ℃ K1 / K2 key: short press: select. Long press: cancel / confirm configuration.

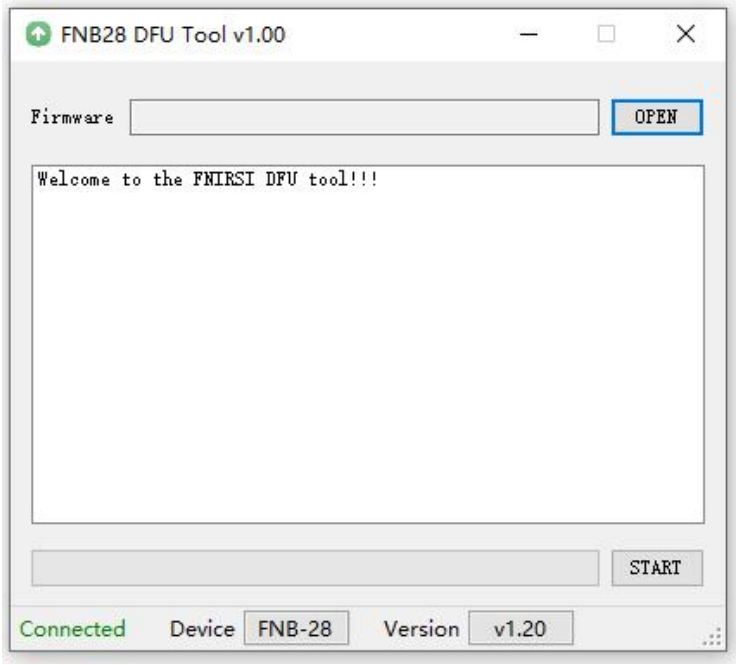
	System language: EN / Chinese. K1 / K2 key: short press: select. Long press: cancel / confirm configuration.
	Restore factory settings: This setting does not clear the recorded values. K1 / K2 key: short press: select. Long press: cancel / confirm configuration.

六、Upgrade firmware instructions

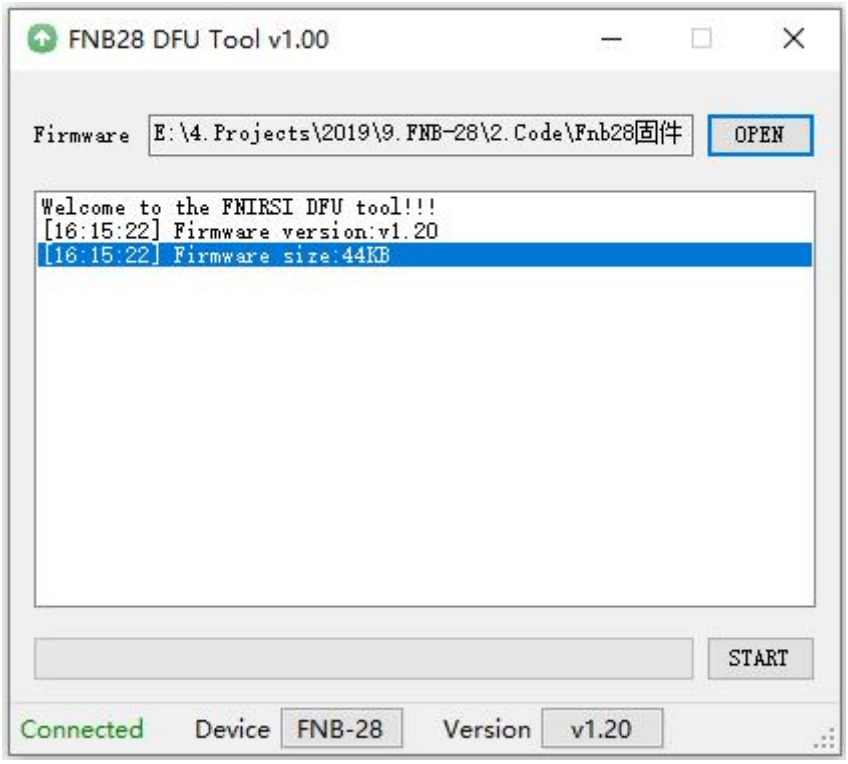
1、 Open the FNIRSI USB Meter upgrade tool.



2、 When FNB28 is in the shutdown state, press the OK key to access the HID-USB interface, and it displays the connected, device model, and device firmware version.



3、 Click OPEN and choose to upgrade the firmware.



4、 Click START to start the firmware upgrade. After the upgrade is completed, FNB28 will restart automatically.